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☐ 1. Document ID: JP 60194066 A

L3: Entry 1 of 2

File: JPAB

Oct 2, 1985

PUB-NO: JP360194066A

DOCUMENT-IDENTIFIER: JP 60194066 A

TITLE: PRODUCTION OF HARD FILM-COATED MATERIAL

PUBN-DATE: October 2, 1985

## INVENTOR-INFORMATION:

NAME

COUNTRY

MINETA, NOBUSHIGE

YASUNAGA, NOBUO

TARUMI, NOBORU

OBARA, AKIRA

IKEDA, MASAYUKI

SATO, JUNICHI

SHIBUKI, KUNIO

## ASSIGNEE-INFORMATION:

NAME

COUNTRY

AGENCY OF IND SCIENCE &amp; TECHNOL

SHOWA DENKO KK

TOSHIBA TUNGALOY CO LTD

APPL-NO: JP59049267

APPL-DATE: March 16, 1984

US-CL-CURRENT: 427/180; 427/586

INT-CL (IPC): C23C 14/28

## ABSTRACT:

PURPOSE: To obtain a hard film-coated material coated with a dense film having high hardness by controlling the irradiating angle of the convergent laser light irradiated on a rotating body which is a material to be irradiated within a prescribed range and irradiating laser light having large output thereon.

CONSTITUTION: Laser light 1 is converged by a condenser lens 2 and is introduced through a transmission window 3 into a vessel 4 where the laser light is irradiated from a tangent direction on the rotating surface of a rotating body 5 formed of a material to be irradiated. The sample to be irradiated existing in the irradiating region is then evaporated and released in an arrow R direction. The released sample is deposited by evaporation on a base material 7. The output of the convergent laser light is made  $\geq 500W$  and the irradiating angle of the convergent laser light on the irradiating region is controlled to  $2\sim 40^\circ$  with respect to the tangent direction in the irradiating region. The kind of the usable material to be irradiated is increased and the rate of forming the film is increased according to the above-mentioned method for forming the coated material. The dense and high-hardness characteristics are given to the resultant hard film.

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Full	Title	Citation	Front	Review	Classification	Date
Reference				Claims	KMC	Draw Desc Image

☐ 2. Document ID: JP 60194066 A, JP 88038427 B

L3: Entry 2 of 2

File: DWPI

Oct 2, 1985

DERWENT-ACC-NO: 1985-285583

DERWENT-WEEK: 198834

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TITLE: Hard film coated material prodn. by applying hard particles on metal or ceramic substrate and laser irradiation

INVENTOR: IKEDA M ; MINETA N ; OBARA A ; SATO J ; SHIBUKI K ; TARUMI N ; YASUNAGA N

## PATENT-ASSIGNEE:

ASSIGNEE	CODE
AGENCY OF IND SCI & TECHNOLOGY	AGEN
SHOWA DENKO KK	SHOW
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PRIORITY-DATA: 1984JP-049267 (March 16, 1984)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
<u>JP 60194066 A</u>	October 2, 1985	JA
<u>JP 88038427 B</u>	July 29, 1988	JA

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP 60194066A	March 16, 1984	1984JP-049267	

## INT-CL-CURRENT:

TYPE IPC	DATE
CIPP <u>C23 C 14/24</u>	20060101
CIPS <u>C23 C 14/28</u>	20060101

ABSTRACTED-PUB-NO: JP 60194066 A

## BASIC-ABSTRACT:

Production of hard film coated material, wherein a substrate of tool steel, hard alloy, cermet or ceramic material has deposited on it hard substance particles such as graphite, carbon, diamond carbon, diamond, boron metal, hexagonal boron nitride, cubic boron nitride or wurtzite type boron nitride. The body of the substance is axially rotated within a vessel, and a convergent laser beam is irradiated in a tangential direction to the rotation surface forming an angle theta for vaporising

the substance. The angle theta of irradiation or incidence is 2-40 deg. and output of the convergent laser beam is more than 500W.

ADVANTAGE - By controlling the angle theta, output of the convergent laser beam can be increased. This angle corresponds to output density  $5 \times 10$  to power 3 -  $5 \times 10$  to power 6 W/cm<sup>2</sup> within the irradiation zone.

ABSTRACTED-PUB-NO: JP 60194066 A

EQUIVALENT-ABSTRACTS:

TITLE-TERMS: HARD FILM COATING MATERIAL PRODUCE APPLY PARTICLE METAL CERAMIC SUBSTRATE LASER IRRADIATE

DERWENT-CLASS: L02 M13

CPI-CODES: L02-J01E; L02-J02C; M13-H04;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1669U ; 1776U ; 1778U ; 1893U

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: 1985-123596

Full	Title	Citation	Front	Review	Classification	Date
Reference				Claims	KUMC	Draw Desc Image

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